Madison Telephone Company

(Docket No. 03-0730)

Attachment 2

VeriSign—The Wireless Number Portability Challenge for Wireline Carriers

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The Wireless Number Portability Challenge for Wireline Carriers

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Dec. 12, 2003

Discussion Points

- Overview
- BFRs & Trading Partner Arrangements
- Rural Carrier Issues
- Getting Set-Up
- Implementation and Operational Issues
  - E9-1-1, NENA and Porting Intervals
  - JIP
  - LIDB/CNAM
- NANC Flows and Processes
- Industry Work Groups

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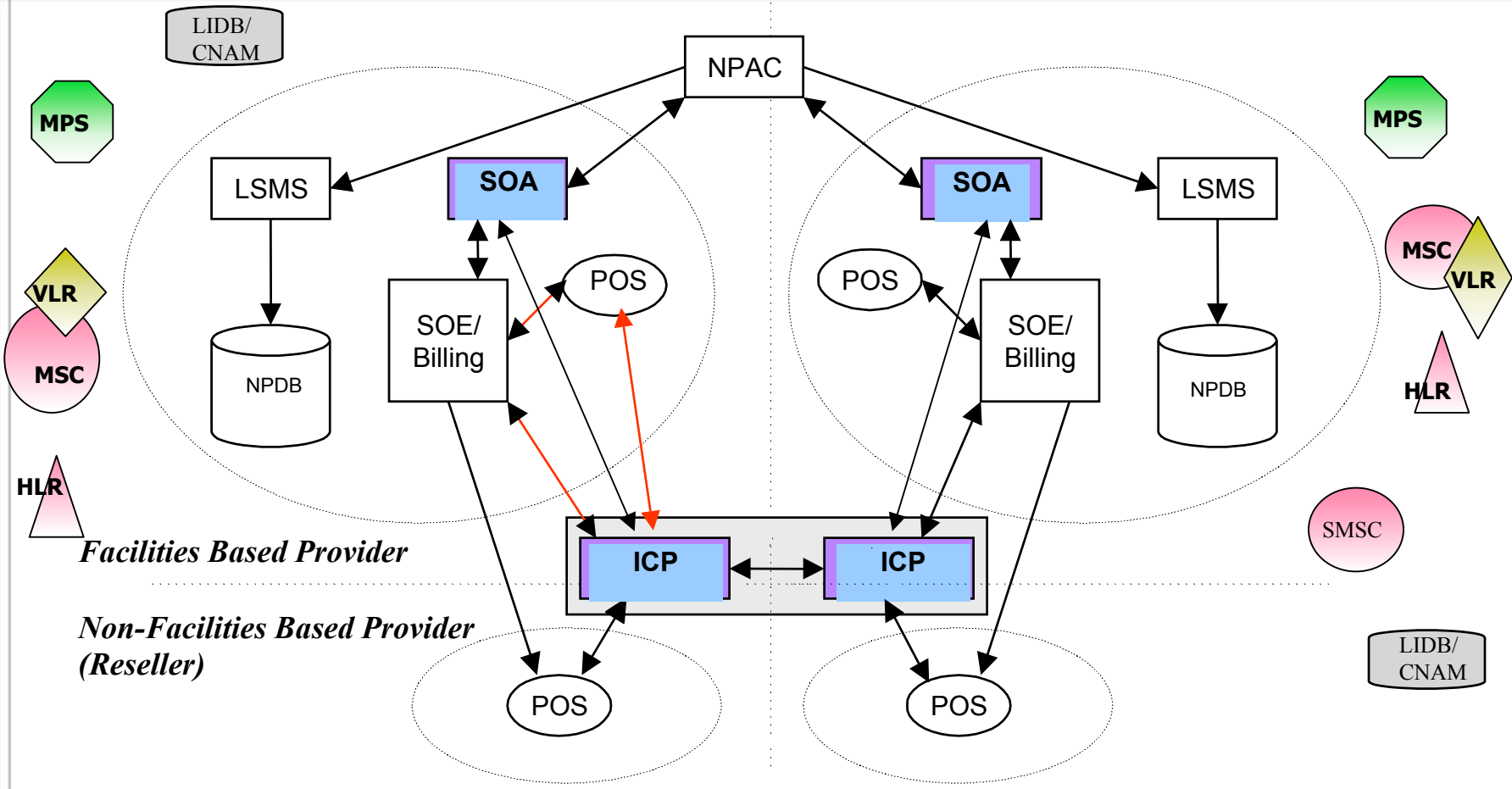
Key Porting and Pooling Components

- **New Required Elements**
  - Data Access For Call Routing
    - LSMS: Local Service Management System
    - Interfaces with Number Portability Administration Centers (NPACs)
    - NPDB: Number Portability Database
  - Pre-Port and Provisioning Systems
    - ICP:InterCarrier Communication Process
    - LSR/FOC: Local Service Request; Firm Order Commitment
    - SOA: Service Order Administration
    - Connection to NPACs for provisioning ported numbers
- **Elements requiring changes for WNP**
  - SSP, MSC/VLR, Customer Care, HLR, POS, Billing, MPS, SMSC etc.

Old Service Provider *New Service Provider*



Key:

POS	Point of Sale	**LSMS**	Local Service Management
SOE	Service Order Entry	**NPAC**	Number Portability Administration Center
ICP	Intercarrier Communication Process	**NPDB**	Number Portability Database
SOA	Service Order Administration		

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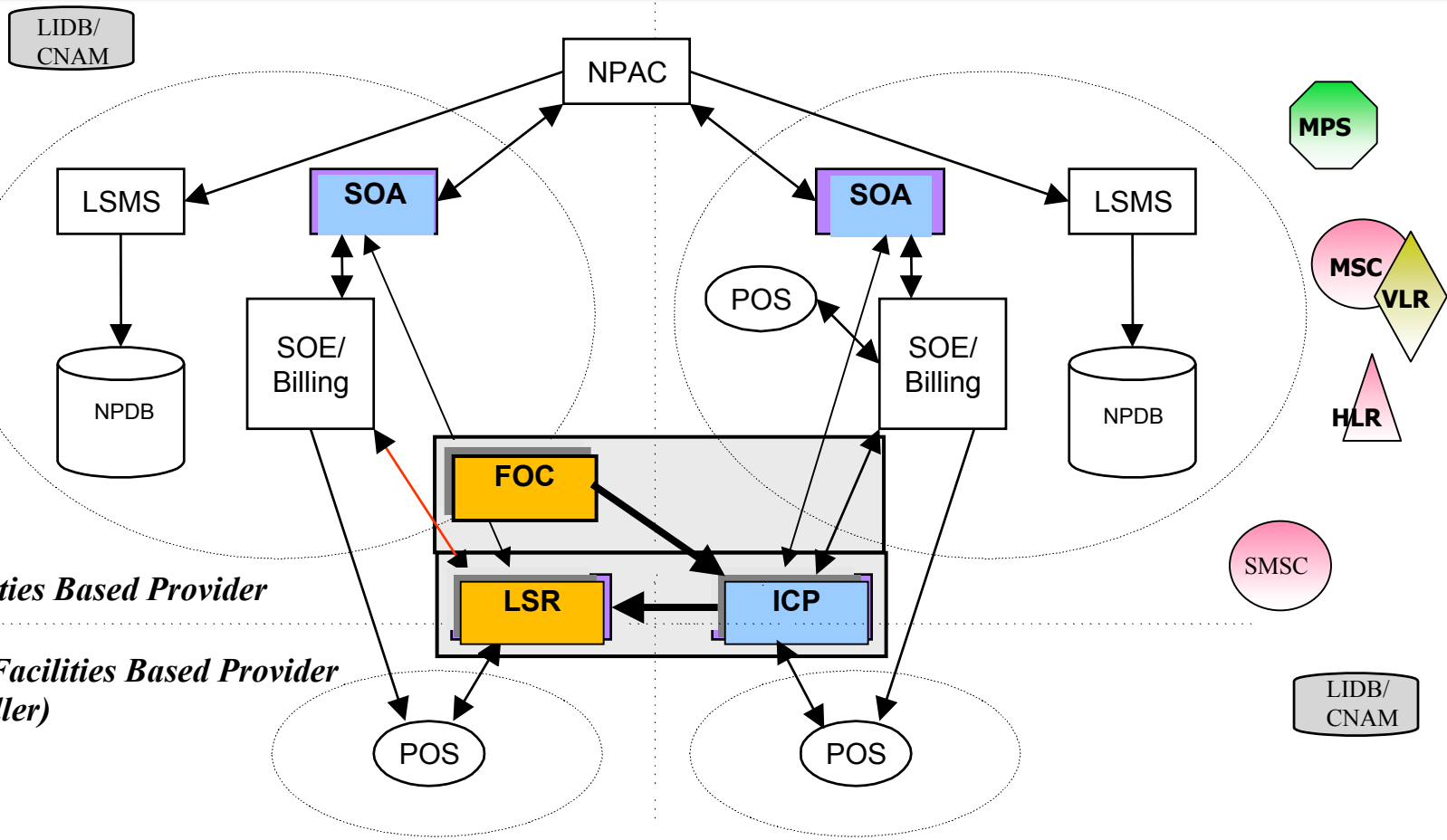
Old Service Provider Wireline *New Service Provider Wireless*



Key:

POS Point of Sale
SOE Service Order Entry
ICP Intercarrier Communication Process
SOA Service Order Administration

LSMS Local Service Management
NPAC Number Portability Administration Center
NPDB Number Portability Database

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Data Access or LRN Queries

- **A Data Access Service or Number Portability Database (NPDB) provides access to the number portability database for call routing information required for ported and pooled numbers.**
- **Carriers must have a mechanism in place to deliver calls made from their networks to ported or pooled numbers.**
- **Options Available to All Carriers**
  - Self-Deployment
  - Default to ILEC
  - Interconnection Agreements with each ILEC
  - Contract with a Service Bureau

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FCC 03-284 Impact on Wireline to Wireless

- **As of Nov. 24, 2003, LEC's must port numbers to wireless carriers under the following conditions:**
  - The requesting wireless carrier's "coverage area" overlaps the geographic location of the rate center in which the customers wireline number is provisioned.
    - Big ??? How do wireline carriers determine coverage area & overlaps?
  - Wireless "coverage area" is the area in which wireless service can be received from the wireless carrier.
  - LEC's bear the burden of demonstrating, with specific evidence, that porting to a WSP without in an interconnection point or numbering resources within the same rate center is technically not feasible**.**
  - No rules or orders required WSP to have points of interconnect or numbering resources in the same rate center as the assigned number for wireline to wireless porting. (P24)

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Bona Fide Requests (BFRs)

- **Bona Fide Requests**
  - Either in or out of the Top 100 MSAs you must receive a specific request from a competitor
- **BFRs should be checked for legitimacy**
  - Specifically request portability
  - Identify the discrete geographic area covered by the request
  - Provide a tentative date by which the carrier expects to utilize NP to port prospective customers
  - Timeframes:
    - Remote Switches supported by host NP capable – 30 days
    - S/W required only – 60 days
    - H/W required – 180 days
    - Both required – 180 days
- **Next Big Date: May 24, 2004**

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Trading Partner Business Arrangements

- **Some sort of arrangement must be reached to exchange data**
- **Interconnection Agreements – FCC 03-284 Ruling Impact:**
  - WSPs need not enter into 251 (252) interconnection agreements (IA) **solely** for the purpose of porting numbers.
  - Wireline carriers may not unilaterally require IA's prior to intermodel porting
  - IA's are not necessary to prevent unjust or unreasonable charges or practices by wireless carriers with respect to porting
  - IA's are not necessary for the intermodel porting for consumer protection
- **Service Level Agreements (SLAs)**
- **Business Arrangements**

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Trading Partner Business Arrangements

- **Exchange of data typically would include:**
  - Basic Contact information (escalation process, day-to-day personnel info)
  - Basic Technical information sufficient to allow porting functionality
  - Basic Technical information sufficient to allow pre-port customer validation (transmission method, fax numbers, test system information)
  - Basic Information for customer validation (mandatory info and fields)
  - Business Days/Hours for Porting
  - Testing Agreements/Arrangements
    - Exchange test numbers
    - Exchange test set-up data
    - Testing days/hours
    - Tests to perform
    - Test configurations
  - Scrutinize Any agreements before Signing
    - Legal review
    - Stipulations that are not legal or unscrupulous

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Standardized Inter-Carrier Communication Process

- **Standardized Process Across All Carrier Types**
  - Wireless is ICP to ICP (electronic)
  - Wireline is LSR/FOC (electronic or fax)
  - Wireline to Wireless is ICP/LSR or FOC/ICP (electronic or fax)
- **Porting Intervals – Simple Ports**
  - Wireless to Wireless – 2.5 hours
    - ½ hour for validation, 2 hours for port3
  - Wireline to Wireline – 4 days
    - 1 day for validation, 3 days for port
  - Wireline to Wireless – 4 days (NPRM)
    - Same as wireline
  - Wireless to Wireline - 4 days (NPRM)
    - Same as wireline
- **FCC 03-284: NPRM – Looking for comment on shortening the wireline to wireless intervals.**

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Standardized Inter-Carrier Communication Process

- **Validation of Subscriber**
  - Ensure the correct customer is being ported
  - Ensure the customer has identified the correct Old Service Provider
- **Wireline validation process is the LSR/FOC**
  - LSR – Local Service Request – from new to old
  - FOC – Firm Order Commitment – from old to new
- **Methods to receive or transmit these requests/responses**
  - ILEC to CLEC: typically done over electronic interface
  - CLEC to CLEC: typically done via Fax
- **Validation Fields**
  - Wireless uses a minimal number of fields
  - Wireline may require more data – i.e. service address

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Local Service Request & Firm Order Commitment (LSR/FOC)

- Method of pre-port communication between service providers
- Used in wireline to wireline porting but may also a requirement for porting between wireline and wireless
- Use of the LSR and mandatory fields required are determined through interconnection agreements and vary from company to company
- Transmission of LSR information done via an Electronic Data Interchange (EDI), User Interface (UI), fax, or e-mail transfer

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Setting Up

- **NPAC Contract www.npac.com for User Agreements**
- **Responsibilities:**
  - Switch Upgrades
    - NP Triggers
    - Ported-out markings
  - Open NPANXXs
  - Open LRNs
  - Capability to validate porting-out subscriber
  - Capability to accommodate a port-to-original
  - Any OSS integrations (billing, back-office system etc.)
  - How to deal with snapback and treatment of disconnected numbers
- **Become very familiar with the NANC flows**
- **Become very familiar with LSR/FOC process (www.atis.org)**
- **Contract for Service Order Administration or Low Tech Interface**
- **Customer Care considerations**
  - Methods and Procedures
  - Training

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The Number Pooling Exemption

- **From the 4th Report and Order (FCC 03-126) Adopted May 28, 2003**
  - All carriers, except those specifically exempted, are required to participate in TBNP, in accordance with the national rollout schedule, regardless of whether or not they are required to provide LNP.
- **Exempts from the TBNP requirement:**
  - Rural Telco's and TIER 3 CMRS providers (< 500,000 subs) that have not received a request to provide LNP
  - Carriers in rate centers where they are the only provider with numbering resources.

Options to Rural Carriers to Consider

- **Waivers (03-284, P.30)**
  - Carriers may file petitions for waiver of their obligations to port numbers to wireless
  - Carriers, if they can provide substantial, credible evidence that there are special circumstances that warrant departure from existing rules.
  - These waivers may postpone implementation but will not eliminate the requirement permanently.
  - Several LECs had sought and been granted waivers
- **State Suspension Requests**
  - Groups of rural LECs within states consider immediate filings to urge State commissions to act, even on a temporary basis, to avoid the Nov. 24th deadline.
- **Negotiate Company-Specific extensions of Implementation Time**
  - Contact wireless provide and negotiate a mutually agreed upon implementation date.
- **Potential Joint Industry and Client Efforts**
  - Contact your legal consultants or internal legal staff to determine if this is an effort you wish to join or already have done so.

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No Interconnection or Compensation Arrangements

- **Example: TN was originally wireline and is now wireless but without direct connect from SSP**
  - Dropped call?
  - Call interrupt…"You must first dial a 1"
  - Routed to PICed IXC--Customer gets a surprise toll bill, was a local flat rate call
- **Without a compensation agreement**
  - Does the Rural carrier eat the transport costs
- **Impact of porting with no local interconnection or numbers is:**
  - Massive customer confusion
  - Subsidy to construction of large carrier network
- **Impact to Rural ILEC processes**
  - Provide customer education and guidance
  - Rural carrier will be get calls from irate customers for something that is beyond your control

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E 9-1-1 Issues

- **Testing: Critical Issue**
  - LAB tests appear to run smoothly but production (live network, real TNs) tests encountered major problems
    - Software adjustments are needed for both switch and 9-1-1 third party vendors
    - Communicate with your vendors to ensure your switches have needed patches
    - Carriers must test with MIN/MDN separated handsets
- **Porting Process**
  - In a wireline to wireless port (inter-species) the service address must be removed from the 9-1-1 ALI database
  - To ensure compliance, the port-in WSP must populate the "Number Portability Direction Indicator" (NPDI) field on the LSR (Local Service Request) form.
- **Mixed Service Callback Solutions**
  - May not be resolvable
  - Coordinate each port
  - Wireline could shorten disconnect time
  - Wireless could extend the activate time

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E 9-1-1 and Intermodel porting

- **Mixed Service:**
  - Sub has service from both carriers until porting process is complete
  - Wireless carrier activates number before disconnect done at Wireline side
  - Is not restricted to any one type of port – can occur across technology
- **Scenario:**
  - SBC customer ports to Nextel, Nextel activates sub before NPAC broadcast occurs
  - Sub calls 9-1-1 on wireless handset, sub gets cut-off before providing all information, responding PSAP calls back sub, but call is routed to wireline switch since download to NPDB has not been done yet
  - Problem is subscriber is sitting in a ditch and the PSAP is calling his home telephone back

CNAM/LIDB Updates

- **Recently raised concerns regarding the use and update of databases such as LIDB and CNAM relative to a ported number**
  - Both old and new SP uses same database provider:
    - Old SP must first notify provider to delete record before an activation can take place
    - May delay port particularly if updates are via a batch process
  - Database provider will not input line record until port activation has occurred
- **This issue may be timing related**
- **Intent is not to change existing processes but rather for WSPs to understand the process and the timing requirements**
- **All WSPs should contact their LIDB/CNAM provider for more info**
- **WNPO looking for input from both wireline and wireless carriers**

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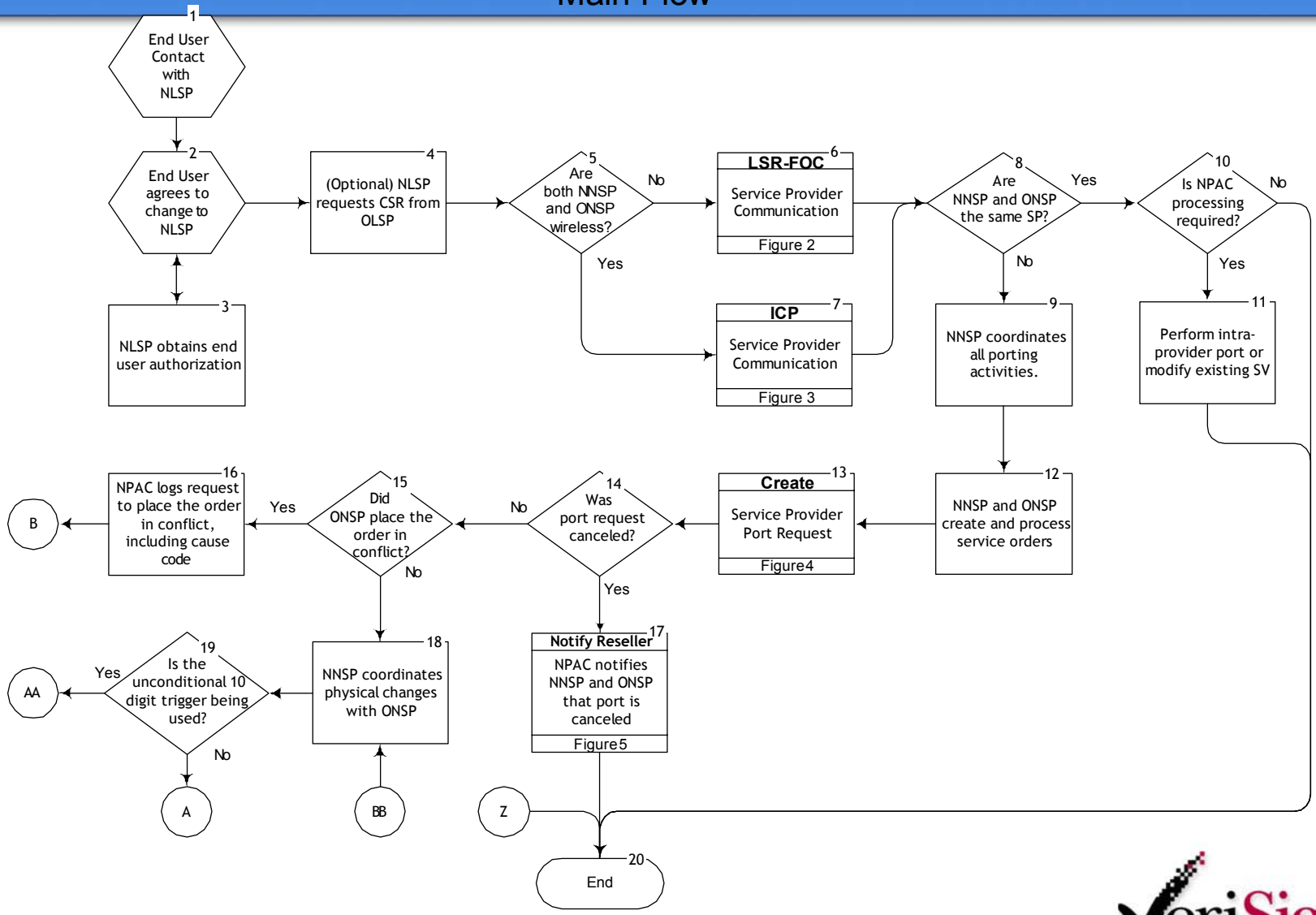
NANC* Industry Process Flows

- Inter-Service Provider LNP Operations Flows & Associated Narratives
- Porting process using LRN
- Service Provider Communications for both wireline and wireless
- Provisioning with a 10-Digit Trigger
- Management of Conflicts, Cancellations, Disconnects at NPAC Interface Level
- Code Opening and Audit Process
- Reseller Notification Process
- How to Manage Type 1 Interconnection Ports
- Available at www.npac.com

*North American Numbering Council

Inter-Service Provider LNP Operations Flows
- Main Flow -



Approved by LNPAWG: 7/9/03

Figure 1

Version 2.0

NPAC Timers, Help Desk Hours, and Maintenance Window Timeframes

	* NPAC Help Desk Hours		** Long Business Day Timers:			SP Maintenance Windows (Effective 11/02/03)	
Region (time zone)	Test Bed (3/1/02 – 11/23/03)	Production System (11/24/03 forward)	All Test Beds (3/1/02 and forward)	Production System (3/1/02 – 11/23/03)	Production System (11/24/03 forward)	SP (Standard) Maintenance Window	SP Extended Maintenance Window
Mid-Atlantic (Eastern)	N/A	8am – 8pm Central	3am – 11pm Central	3am – 11pm Eastern	8am – 8pm Central	2am – 8am Central	Midnight – 8am Central
Midwest (Central)	N/A	9am – 9pm Central	3am – 11pm Central	3am – 11pm Central	9am – 9pm Central	2am – 8am Central	Midnight – 8am Central
Northeast (Eastern)	N/A	8am – 8pm Central	3am – 11pm Central	3am – 11pm Eastern	8am – 8pm Central	2am – 8am Central	Midnight – 8am Central
Southeast (Eastern)	N/A	8am – 8pm Central	3am – 11pm Central	3am – 11pm Eastern	8am – 8pm Central	2am – 8am Central	Midnight – 8am Central
Southwest (Central)	N/A	9am – 9pm Central	3am – 11pm Central	3am – 11pm Central	9am – 9pm Central	2am – 8am Central	Midnight – 8am Central
West Coast (Pacific)	N/A	11am – 11pm Central	3am – 11pm Central	3am – 11pm Pacific	11am – 11pm Central	2am – 8am Central	Midnight – 8am Central
Western (Mountain)	N/A	10am – 10pm Central	3am – 11pm Central	3am – 11pm Mountain	10am – 10pm Central	2am – 8am Central	Midnight – 8am Central

* Help Desk is 7 days per week.

** Long Business Day Timers run seven days a week except NPAC Holidays.

Update 8/13/03 – FINAL

Fall-Out Management – How to Manage It

- **Creation of the Fall-Out Reduction Team (FORT)**
- **Reports to the WNPO, active through Dec. 2004.**
- **Consists of wireline and wireless carriers, looking for more participants**
- **The WNPO 'Fallout Reduction' task force:**
  - A forum by which all Service Providers, Vendors, and Service Bureaus can voluntarily collaborate on reducing fallout that is a result of launch of Wireless Local Number Portability. The task force will analyze the porting processes to identify the root cause of the industry's fallout. The task force will make recommendations through the WNPO on the means to eliminate fallout to improve the consumers experience during the porting process.
- **Definition/Scope of Issue:**
  - Port transactions (in or out) that do not pass edits and/or validation through the ICP or LSR process (SOA or FAX)
  - Port transactions that are not completed in a manner agreed to in the industry standards and guidelines
  - WLNP initiated issues that may or may not have a known industry solution
  - Wireless to Wireless and intermodel Fallout will be addressed in this forum

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Fall-Out Management etc.

- **Level of Fall-Out Varies & for Several Reasons**
  - Errors from internal processes, system failures
  - Errors, exceptions, rejects from trading partners
  - Extensive Training from external forces and internally
  - Lack of understanding of NANC process flows
  - Lack of understanding of Business arrangements
- **Methods and Procedures need to be documented & distributed**
  - Internal
  - NPAC and Industry
- **Identified Issues**
  - No official contributions (PIC Freeze)

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Jurisdictional Information

- **Issue: There is no information in the existing signaling that the terminating company can use to determine where a call originated.**
  - Required in order to determine the correct jurisdiction for billing and some taxing processes.
  - Involves both local and interexchange call detail records produced for either a terminating access tandem or end office switch
  - Includes both cellular originated and CLEC switches serving more then one STATE/LATA
- **Desired result: To provide a way, using recorded information, to identify the correct jurisdiction of the call to be used for billing and tax assessment.**

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Jurisdictional Information, cont.

- **OBF Recent Proposal (9/30/03):**
  - JIP should be populated with a LERG-assigned NPANXX
  - JIP should be populated in the IAMs of all wireline, wireless originating calls where technically feasible
  - The NIIF does not recommend the JIP be mandatory since calls missing any mandatory parameter will be aborted but strongly recommends it be populated where technically feasible
  - Where the originating switch cannot signal JIP it is desirable that the subsequent switch in the call path populate the JIP using a data fill default associated with the incoming route
  - Where technically feasible, the JIP should be populated with an NPANXX that is specific to the state and LATA of the call and for wireless callers this should be based on the originating cell site

Failure to Comply & Enforcement

- **FCC primary enforcement goals are to bring licensees & others into compliance with the FCC rules & impose penalties where appropriate.**
  - Letters of Admonishment
  - Notice of Violation
  - Citation
  - Cease and Desist
  - License Revocation
  - Monetary Forfeiture
- **Forfeiture amounts are based on available guidelines including**
  - Forfeiture Guidelines Report and Order
  - Forfeiture Guidelines Reconsideration Order

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WNPO – Wireless Portability Operations Team

- **The Wireless Operations Team:**
  - Provides a forum for the identification, discussion and resolution of issues affecting Service Provider Operational groups in their mandated implementations for Service Provider Local Number Portability (LNP) within their respective companies.
- **The Wireless Operations Team will be responsible for:**
  - Activations
  - Customer Provisioning and Service
  - Technical Support (Roaming)
  - Testing
  - Service Assurance
  - Ancillary Services (911, roaming, SMS, etc.)
  - Intercarrier Communications
- **Reports to LNPA-WG & meets the same week, minutes located @ wireless section of** www.npac.com

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WTSC – Wireless Test Subcommittee

- **Main Purpose is to coordinate InterCarrier testing for WSPs**
- **Testing is in progress in several major markets across the country**
  - Test plans have been developed and are available for carriers
  - ITC and Network test schedule is posted at the web site
  - Carrier test SPOC contact names and numbers also available at web site
  - Majority of testing is by Tier 1; little Tier 2 and no Tier 3 participation
  - Little or no wireline rural carrier participation
- **WTSC has expressed concern that E9-1-1 testing has been inadequate. Critical that carriers test this functionality**
- **Some carriers have announced a moratorium on ICP – ICP testing from Nov. 15 to Jan. 15**
- **Reports to WNPO & meets the same week, minutes located @ wireless section of www.npac.com**
- **Continue to operate through June 2004 for new entrants**

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InterSpecies Task Force Wireless Workshop

- **Mission Statement**
  - Address and Resolve Issues pertaining to the ordering & provisioning of local telecom services between wireline and wireless providers
  - Will research impacts to existing guidelines driven by wireline and wireless integration
  - Prepared to provide supporting documentation for all recommendations as they relate to the WICIS or LSOG.
  - Members are from Wireless Workshop, Local Services Ordering and Provisioning (LSOP) Committee, Directory Services Subcommittee
- **Current Issues being Addressed**
  - Directory Issue
  - Type 1 Migration
  - Jurisdictional Information Parameter
  - CLEC Migration
- **Notes, agendas and meeting dates can be found at www.atis.org, OBF section**

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Helpful Sites

- http://www.ported.com
- http://www.npac.com
- http://www.atis.org
- http://www.nanpa.com
- http://www.fcc.gov
- http://www.mbiadmin.com
- http://www.numberpool.com
- http:// www.industry.net
- http://www.verisign.com
- http://www.webproforum.com
- http://www.global.ihs.com
- http://www.t1.org/t1p1/p1-grid.htm
- http://www/wow-com.com
- http://www.3gpp.org
- http://infocentre.gsm.org

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Helpful Documents

- **LNP Standards Documents**
  - TRQ No. 01 April 1999 Number Portability Operator Services Switching Systems
  - TRQ No. 02 April 1999 Number Portability Switching Systems
  - TRQ No. 03 April 1999 Number Portability Database and Global Title Translations
  - TRQ No. 04 July 1999 Thousand Block Number Pooling Using Number Portability
  - TIA/EIA-41-D WNP Phase III PN-4411
  - Wireless Inter Carrier Interface Specifications (WICIS V. 2.0.1)

Helpful Documents, cont.

- **LNP Informative References**
  - FCC Report & Order CC Docket 99-200, Issued 3/31/2000
  - FCC 2nd Report & Order, Issued 12/29/2000
  - FCC 3rd Report & Order, Issued 12/28/2001
  - INC Report on NP - 96-0607-013, Issued 6/7/96
  - INC Thousand Block Pooling Admin Guidelines - 99-0127-023 Issued 1/10/00
  - INC LRN Assignment Guidelines
  - MBI Assignment Guidelines & Procedures – CTIA Issued 1/19/2001
  - NANC LNPA-WG 1st, 2nd, & 3rd Report on Wireless/Wireline Integration

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Helpful Documents, cont.

- **LNP Informative References, cont.**
  - CTIA Report on Wireless Number Portability , Issued 7/7/1998
  - NANC Risk Assessment Report: Launching Wireless Pooling or Porting without Ubiquitous MDN/MIN Split, Issued 2/5/2002
  - CTIA Numbering Advisory WG Report on ICP
  - Numbering Resource Optimization Third Order & Report, Issued 12/28/2001
  - FCC Docket FCC 02-73 in the Matter of NRO, Issued 3/14/2002
  - Deputy Chief Docket DA 02-948 in the Matter of NRO, Issued 4/24/2002
  - FCC's Memorandum Opinion & Order (MO&O) Issued 7/16/2002
  - NP for PSC 1900 SMS, ANSI T1.711-1999, May 27, 1999

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Helpful Documents, cont.

- **LNP Informative References, cont.**
  - TIA/EIA-41-D Enhancements for WNP Phase II, TIA-756-A, January, 2002
  - TIA/EAI-D WNP-Phase3 (aka PN-4411) Enhancements for MDN Based Message Centers
  - SMS Forum – Interoperability Work Group – Gateway Interconnect, V 0.02, Feb 2, 2002
  - SMPP Developers Forum
    - MC Interworking Concepts, V 0.2, June 12, 2001
    - Inter-Carrier SMS Using SMPP, V 0.2, Feb. 8, 2002
    - SMPP Protocol Specification, V5.0 Draft14, Jan. 16, 2003
  - FCC 4th Report & Order, Issued June 18, 2003
  - FCC Memorandum Opinion and Order FCC 03-237, Adopted October 3, 2003
  - FCC Memorandum Opinion and Order & NPRM FCC 03-284, Adopted November 7, 2003


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(Docket No. 03-0730)

Attachment 3

Madison Telephone Company
LOCAL NUMBER PORTABILITY DATA SUMMARY

	Initial LNP Start-Up Cost	Year 1	Year 2	Year 3	Year 4	Year 5	Total LNP Cost Projections
INVESTMENTS							
LNP Software	$ 42,560	$ -	$ -	$ -	$ -	$ -	**$ 42,560**
OSS	$ 20,000	$ -	$ -	$ -	$ -	$ -	**$ 20,000**
Voice Announcements	$ 5,588	$ -	$ -	$ -	$ -	$ -	**$ 5,588**
Switch Translations	$ 12,000	$ -	$ -	$ -	$ -	$ -	**$ 12,000**
LNP Hardware	$ 4,000	$ -	$ -	$ -	$ -	$ -	**$ 4,000**
LNP Transport Hardware	$ -	$ -	$ 6,200	$ 6,200	$ 6,200	$ 6,200	**$ 24,800**
-	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
-	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
EXPENSES							
Query	$ -	$ 782	$ 912	$ 1,042	$ 1,173	$ 1,303	**$ 5,211**
Transport and Transit	$ -	$ 57,767	$ 67,395	$ 77,023	$ 86,651	$ 96,279	**$ 385,115**
Regulatory/Legal/Admin/Order Proc/Cust Svc	$ 30,000	$ 32,278	$ 7,046	$ 7,046	$ 7,046	$ 7,046	**$ 90,464**
Employee Education	$ 41,895	$ 900	$ 900	$ 900	$ 900	$ 900	**$ 46,395**
Technical Trouble	$ 8,750	$ 6,250	$ 6,250	$ 6,250	$ 6,250	$ 6,250	**$ 40,000**
Customer Education	$ 7,865	$ 7,393	$ 7,314	$ 7,235	$ 7,157	$ 7,078	**$ 44,041**
Sub-Totals	$ 172,658	$ 105,370	$ 96,017	$ 105,697	$ 115,377	$ 125,056	**$ 720,174**
Present Value Factors	100.0000%	89.8876%	80.7979%	72.6273%	65.2830%	58.6813%	
Present Value Total Cost Projections	**$ 172,658**	**$ 94,714**	**$ 77,580**	**$ 76,765**	**$ 75,321**	**$ 73,384**	**$ 570,423**
Access Lines							**3,551**
Months							**60**
Annual Expense per subscriber per month							**$ 2.68**

LOCAL NUMBER PORTABILITY DATA

FOR DEVELOPMENT OF LNP END USER AND QUERY CHARGES

COMPANY NAME	**Madison Telephone Company**
STUDY AREA NUMBER	**341049**

	AVERAGE MONTHLY LINES	**YEAR**					
		0 (Current)	**1**	**2**	**3**	**4**	**5**
1.	PBX	0	0	0	0	0	0
2.	ISDN-PRI	0	0	0	0	0	0
3.	Other (Sum of Residential, Single Line Business, Multiline Business, Centrex)	5,243	4,928	4,876	4,824	4,771	4,719
3a	**TOTAL**	**5,243**	**4,928**	**4,876**	**4,824**	**4,771**	**4,719**
3b	**Present Value Access Line**	**5,243**	**4,430**	**3,940**	**3,503**	**3,115**	**2,769**

	INVESTMENTS	**YEAR**					
		0 (Current)	**1**	**2**	**3**	**4**	**5**
4.	Software Upgrades Total: (Please also itemize below, and provide descriptions in the right-most column)	**$80,148**	**$0**	**$0**	**$0**	**$0**	**$0**
4a.	LNP Software	$42,560					
4b.	OSS	$20,000					
4c.	Voice Announcements	$5,588					
4d.	Switch Translations	$12,000					
5.	Hardware & Other (Please list items below)						
5a.	LNP Hardware	$4,000					
5b.	LNP Transport Hardware			$6,200	$6,200	$6,200	6200
5c.							
5d.							
	TOTAL	**$84,148**	**$0**	**$6,200**	**$6,200**	**$6,200**	**$6,200**

	EXPENSES (Maintenance etc.)	**YEAR**					
6.	Please list items below	**0 (Current)**	**1**	**2**	**3**	**4**	**5**
6a.	Regulatory/Legal/Admin/Order Proc/Cust Svc	$30,000	$32,278	$7,046	$7,046	$7,046	$7,046
6b.	Employee Education	$41,895	$900	$900	$900	$900	$900
6c.	Technical Trouble	$8,750	$6,250	$6,250	$6,250	$6,250	$6,250
6d.	Customer Education	$ 7,865	$ 7,393	7314	$ 7,235	$ 7,157	$ 7,078
	TOTAL	**$88,510**	**$46,821**	**$21,510**	**$21,432**	**$21,353**	**$21,274**

Madison Telephone Company

Tranport Costs - Tandem 1

Year	SBC / ILEC Transit Rate	Demand Projections	Transit Expense
1	0.045848	1,259,973	$ 57,767
2	0.045848	1,469,969	$ 67,395
3	0.045848	1,679,965	$ 77,023
4	0.045848	1,889,960	$ 86,651
5	0.045848	2,099,956	$ 96,279
Total			$ 385,115

Transport Costs - Tandem 2

Year	GTE / ILEC Transit Rate	Demand Projections	Transit Expense
1			$ -
2			$ -
3			$ -
4			$ -
5			$ -
Total			$ -

Query Dip Charges

Year	Rate	Projected Demand	Present Value Query Charge
1	0.003102	251,995	$ 782
2	0.003102	293,994	$ 912
3	0.003102	335,993	$ 1,042
4	0.003102	377,992	$ 1,173
5	0.003102	419,991	$ 1,303
Total	.		$ 5,211

Madison Telephone Company
LOCAL NUMBER PORTABILITY DATA
FOR DEVELOPMENT OF LNP ORDER EXPENSE

COMPANY NAME	**Madison Telephone Company**
STUDY AREA NUMBER	**341049**

	DATA FOR LNP ORDER EXPENSE **Activity**	**Time Required (Hours)**	**Rate ($/hour)**	**Cost**
1.	Access Service Request (ASR) is Logged in	0.50	$35.00	$17.50
2.	ASR Validity Check	0.50	$35.00	$17.50
3.	Service Order Preparation	0.50	$35.00	$17.50
4.	Input Order to System	0.25	$35.00	$8.75
5.	Distribute ASR to Work Groups	0.25	$35.00	$8.75
6.	Completion Information Received	0.50	$35.00	$17.50
7.	Update Customer Service Records	0.25	$35.00	$8.75
8.	**Total Cost**	**2.75**		**$96.25**

1	INPUTS Unless otherwise indicated, all data is from year-end 2002:	
2	**Madison Telephone Company**	**341049**
3	I-CO Data	
4	PBX Lines	0
5	ISDN-PRI Lines	0
6	Other Access Lines	5,243
7	Equipped Lines	10,640
8	Local MOU- Tandem 1	20,999,557
9	Local MOU- Tandem 2	-
10	Number of Employeees	50
11	Number of End Offices Requiring Translations	2
12	RIC	$ 0.014870
13	Tandem Switched Transport	$ 0.025860
14		
15	Tandem 1 Transiting Rates	
16	Tandem Switching	$ 0.004836
17	Tandem Transport	$ 0.000189
18	Tandem Transport Facility	$ 0.000093
19		
20	Tandem 2 Transiting Rates	
21	Tandem Transiting	-
22	Tandem Transport	-
23	Tandem Transport Facility	-
24		
25	Assumptions	
26	Average Holding Time Per Local Call	5.00
27	LNP Query Charge	$ 0.003102
28	Present Value Factor, Year 1	0.89888
29	Present Value Factor, Year 2	0.80798
30	Present Value Factor, Year 3	0.72627
31	Present Value Factor, Year 4	0.65283
32	Present Value Factor, Year 5	0.58681
33	Wireless Penetration, Year 1	6%
34	Wireless Penetration, Year 2	7%
35	Wireless Penetration, Year 3	8%
36	Wireless Penetration, Year 4	9%
37	Wireless Penetration, Year 5	10%
38	Regultatory/Legal Fee Per Hour	$ 200
39	Regulatory/Legal Hours, Year Zero	150
40	Customer Education, Cost Per Mailing	$ 0.75
41	Customer Education, Number of Mailings Per Year	2
42	Employee Education, Cost Per Employee	$ 300.00
43	Employee Education, Number Of Employees Per Year, 1-5	3
44	Cost Per Translation Per Office	$ 3,000
45	Technical Cost Per Hour	$ 50.00
46	Technical Hours, Year Zero	175
47	Technical Hours Per Year, 1-5	125
48	LNP Adminstration Projected Expense	$ 2,000
49	LNP ASR Processing Fee	$ 96.25
50	Software Cost Per Wired Line	$ 4.00
51	Number of Employees Needing Technical Training	3
52	Cost Per Technical Training Per Employee	8,965

		units	cost per	Total	Comments
4a.	LNP Software	10,640	$ 4	$ 42,560	The LNP price would be based on the number of equipped lines that in the DMS-10 office, direct interface GR-303 lines and remotes. Also the charge increases as the number of equipped lines increase in the DMS-10 area. There is a secondary offer in which we base the price on 130% of the total number of customers in a DMS-10 complex. Either way the price per line is $4.00.Wired lines 1120 per bay. Staunton 4 x 1,120, Worden 3x1120, liv 1x1120, hamel 1x1120, ptown .5x1120 Jim Trier, Nortel Networks, 847-706-8156
4b.	Billing Software - Operation Support Systems	1	$ 20,000	$ 20,000	Based on conversations with Martin & Associates their preliminary intial cost projection for OSS was estimated at $5,000 per company; however, at that time M&A didn't anticipate having to develope a new number tracking systems program - cost unknown. Based on previous exceperience with this vendor MTC estimates these cost to run in excess of $20,000.
4c.	Cognitronics - Voice Announcement Upgrade	100%	$ 5,588	$ 5,588	MTC voice announcement equipment (cognitronics) required upgrades to include special announcements related to number portability. The ANI announcements needed for LNP were not currently available in MTC announcement equipment. MTC allocated 100% of the total upgrade t LNP, since MTC had adequate voice annoucement equipment in service prior to the LNP requirement.
4d.	Switch Translations - Nortel Systems	2	$ 3,000	$ 6,000	The DMS-10 HSO, SSO or SA office must be at 410.10 generic or higher and have SS-7 functionality activated. LNP feature software activation is price at $4.00 per equipped line. This would include any local line packs, remotes or DLC interfaces (GR-303/TR-08) locations that are shown in the switch as equipped lines. Also LNP translation can be difficult so I recommend that you also engage Nortel to help support the translation requirements. The service charge for this runs about $3,000 per office. (HSO,SS(or SA) If you have any questions please give me a call. Thanks Jim Trier Nortel Sales 847-706-8156
4d.	Switch Translations - Engineering	2	$ 3,000	$ 6,000	In addition to the above charges from NT, MTC will have a minimum of two people present during the conversion process (one MTC and one CCE). Based on conversations with Charlie Watts @ CCE it was determined that the testing and verification process related to the Nortel perform translations would run another $3,000 per host office.
5.	Hardware & Other (Please list items below)				
5a.	LNP Hardware	1	$ 4,000	$ 4,000	Feature cost associated with generic load. I (Jim T.) have gone back into the records in Schaumburg and have look at the 1999/2000 jobs. The file on these jobs does not contain a copy of the equipment list. I have sent a request to Raleigh to pull the Worden jobs for 1999/2000 to see if there is any indication of the equipment purchase on these jobs. I have pulled the following H numbers for jobs that were done around that time in Worden. (HG9508,HH71452, HH7142) Did you guys own Staunton back in 1999? 2000? LNP is sold as a feature and then by the equipped line. LNP pricing would have been provided on the DMS-10's separately. Thus if the LNP was purchased in 1999/2000 for Worden and Staunton was not part of the network we could assume that the LNP in Staunton was not purchase at that time. That's just a secondary area tha needs to checked. Hopefully we will be able provide you a answer sometime next week. If you have any questions please give me a call. Jim Trier Nortel Networks 847-706-8156
5b.	Transport Hardware - yr1	1	$ 6,200	$ 6,200	HTC Question: Does HTC need a new trunk group to the Collinsville Tandem to route this traffic or can we utilize the existing common trunk group between the Collinsville Tandem and the HTC network? SBC Answer: HTC may use the existing common trunk group to route this traffic to the Collinsville Tandem. Although, as mentioned above if HTC traffic volume grows SBC may reques that HTC install dedicated facilities to the wireless provider instead of using the common facilities and the tandem functionality. Further, since SBC has noted that once a ported carriers traffic reaches the capacity equivelent of a DS-1, the ILEC will no longer be allowed to deliver the traffic via the common toll trunk group ar therefore must install a specific trunk group for each carrier. The cost per DS-1 was obtained from NT and was $6,200, there most lwill be additional costs for installation.
5c.	Transport Hardware - yr2-5	4	$ 6,200	$ 24,800	(same as above)
5d.					

	EXPENSES						
6.	Please list items below						
6a.	Regulatory/Legal/Admin/Cust Svc	yr1	100.00	$	150	$ 15,000	Projected 100 hours of regulatory/legal at a composite average billing rate of $150/hour. This is very conservative as Madison already has nearly 80 - 100 hours of research alone.
	yr1	asr orders	314.58	$	96.25	$ 30,278	The cost of processing a service order has been calculated to be $96.25 per order based on a composite hourly billing rate of $35/hour. These cost reflect the NPAC database updates, ASR handling, verification processes, and customer record updates. It is projected that 6% of the lines will be ported in the first year or roughly 315 requests at $96.25/request. Plus an additional $2,0(or approximately 60 man hours of other customer support, regulatory, administrative time required on a going forward basis, again this is very conservative estimate.
	yr2		52.43	$	96.25	$ 5,046	(same as above)
	yr3		52.43	$	96.25	$ 5,046	(same as above)
	yr4		52.43	$	96.25	$ 5,046	(same as above)
	yr5		52.43	$	96.25	$ 5,046	(same as above)
6b.	Employee Education	Tech	4.00	$	8,965	$ 35,860	NT Training class DMS-10 club (details sent under separate cover)
		Others	50.00	$	300	$ 15,000	Estimated training cost for non-technical employees.
6c.	Technical Support/Processing/Trouble	tech	150.00	$	50	$ 7,500	Estimated Technical labor hours for trouble, and support of LNP. Again very conservative, many times trouble shooting of network issues can take in excess of 40 hours per case. For example, recently we had a family with a solider in the Iraq conflict trying to call home via a iridum sattilite phone. The service provider that was in joint partership with iridum, as it turned out, did not have all the 618 NXX's loaded in their switches. This took extensive time and reasearch to determine.
6d.	Customer Education		5,243.00	$	0.75	$ 3,932	MTC based on previous pre-prepared mail pieces estimated the cost of $0.75 per customer per mailing. Or $3,932 per notice. WE projected that we would run two notices per year.
	TOTAL						